

U.S. Patent Application Serial No. 09/912,503

**REMARKS**

Claims 1 to 5 are in the application wherein claims 1 and 3 stand rejected on prior art. The Office Action has been considered and the Examiner's indication of the existence of patentable subject matter in claims 2, 4 and 5 is acknowledged.

By this Amendment, the specification is amended in order to correct typographical errors and minor language defects of spelling and grammar. Also, claim 1 is amended to the extent of adding the word, "of", which was omitted from line 3. Otherwise, the Examiner is respectfully requested to reconsider the rejection of claims 1 and 3 in view of the following comments.

Claim 1, from which the other claims in the application depend, is directed to an improved printer for feeding sheets between a thermal head and a platen by means of paired feed rollers disposed downstream in the feeding direction from the thermal head. According to the invention, in order to eliminate or minimize the problem of slippage that is prone to occur between printable sheets being fed between a platen and a thermal head, the platen is not driven by a driving power but, instead, one of the paired feed rollers, i.e., that which is located on the thermal head side of the sheet, is a driving roller which is rotated by a power source, while the other paired roller; i.e., that which located on the platen side is a driven roller which is not rotated by a power source. The invention is particularly useful when a printable sheet and a transfer film are simultaneously fed between the thermal head and the platen for preventing slippage of the printable sheet.

It is respectfully submitted that the Examiner's rejection of claim 1 as being unpatentable under 35 U.S.C. 103(a) over **Suzuki, et al.**, in view of **Tamura** is not well taken for the reasons that, first, the patent to **Suzuki et al.** does not show paired feed rollers disposed on the downstream

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side of the thermal head, as required by claim 1. On the contrary, according to Fig. 2 of the patent, the feed direction of the printing medium 23 is from right to left in the illustrations whereby the feed rollers consisting of motor driven feed roller 2 and pinch roller 3 are clearly disposed on the upstream side of the thermal head 17, not the downstream side as claimed. Moreover, although the patent teaches use of a freely rotating platen 20, there is clearly no suggestion of driving that roller of the paired feed rollers, which is located on the feeding head side of the sheet, by a power source and making that roller, which is located on the platen side of the sheet, a freely rotatable member. On the contrary, at col. 3, lines 49 to 58, the patent describes the feed roller 2; i.e. that roller, which is shown in Fig. 2 of the patent, to be located on the platen side of the sheet to be motor driven.

The Examiner's suggestion that **Tamura**, in the Abstract, teaches locating one motor driven roller of a pair of feed rollers on the thermal head side of the sheet and making the other roller freely rotating and disposing it on the platen side of the sheet is incorrect. The Abstract of the **Tamura** patent states only that, "at least one of the pair of rollers is driven to rotate." Clearly such a statement provides no support for the position taken by the Examiner in the Office Action. Moreover, the patent, at col. 11, lines 15 to 20, expressly states that "the pair of feed rollers 31 are coupled to a platen roller drive motor 34M. . . to be rotated by the motor 34M," which is contrary to the Examiner's position.

Claim 2, 4 and 5 depend from claim 1 and have been indicated by the Examiner to contain patentable subject matter. Rejected claim 3 also depends from claim 1 and is submitted as being patentable for the same reasons given above in support of the patentability of claim 1.

For the foregoing reasons, it is submitted that all of the claims in the application patentably

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distinguish over the cited references and, consequently, are allowable. The Examiner is therefore respectfully requested to favorably consider this Amendment and to allow the application.

Attached hereto is a marked-up version of the changes made to the claims and specification by the current amendment. The attached page is captioned "Version with markings to show changes made."

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Version with markings to show changes made

Q\FLOATERSUFC010945 AMEND

**VERSION WITH MARKINGS TO SHOW CHANGES MADE 09/912,503**

**IN THE SPECIFICATION:**

Amend the specification as follows:

**Please replace the paragraph beginning at page 1, line 22 with the following:**

However, in the case of a printer structured such that the platen to which the thermal head is pressed to contact through the printable sheet and the thermal transfer ribbon (only the printable sheet when it is thermal paper) is rotated by turning effort applied from the driving power source, there often occurs a problem depending on the kind of printable sheet in use.

**Please replace the paragraph beginning at page 2, line 1 with the following:**

Such a problem occurs, for example, when a printable sheet 63<sup>2</sup> 68 is used which is in a form of double film, made by folding a film into two of a film 68a and a film 68b, folded at one edge side with the other edge side open with respect to the feeding direction of the arrow denoted at D as shown in FIG. 9. In other words, when printing is performed on the printable sheet 68, the film 68b contacting the platen 62 is fed by the feeding force of the platen 62, but the film 68a on the thermal head 61 side is hard to be fed due to occurrence of slippage with respect to the film 68b as shown in FIG. 10.

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**Please replace the paragraph beginning at page 2, line 26 with the following:**

In the above-described printer, it is preferable to provide a moving member on which the

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thermal head and the driving roller, or the platen and the driven roller are mounted, the moving member being held on a fixing portion to be movable in a direction in which the thermal head and the platen, and the driving roller and the driven roller, respectively, approach to or separate from each other, so that when the moving member is moved in the direction of separation, portions between the thermal head and the platen and between the driving roller and the driven roller are both exposed to an outside of the printer.

**Please replace the paragraph beginning at page 3, line 10 with the following:**

Further, it is suitable to provide, similarly to the above-described printer, a moving member on which the thermal head and the driving roller, or the platen and the driven roller are mounted, the moving member being held on a fixing portion to be movable in a direction in which the thermal head and the platen, the driving roller and the driven roller, respectively, approach to or separate from each other; paired pressing rollers continuously pressing against each other provided downstream of the driving roller and the driven roller in a feeding direction of the printed sheet; and driving means for independently rotating the pressing roller.

**Please replace the paragraph beginning at page 5, line 7 with the following:**

A first embodiment of the invention is explained with reference to FIG. 1 to FIG. 6. In a printer shown in FIG. 1, a printed sheet (paper) 5, which has been printed between a thermal head 2 and a platen 3 independently provided in a frame 1 that is a fixing portion of the printer,

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is fed by paired feed rollers constituted of rollers 6 and 7 provided downstream the thermal head 2 in a feeding direction (on the right-hand side in FIG. 1).

**Please replace the paragraph beginning at page 5, line 17 with the following:**

The platen support member 12 is held by the swingable bracket 11 to be movable in a direction to approach to\_ and separate from\_ the thermal head 2 by a guide portion (not shown). To a spring locking part formed on one end of the platen support member 12, one end of an extension urging spring 26 is attached.

**Please replace the paragraph beginning at page 5, line 24 with the following:**

Accordingly, the platen support member 12 is always urged against the thermal head 2 side by the urging force of the extension urging spring 26. When the platen 3 is separated from the thermal head 2, its position is restricted by a stopper member (not shown).

**Please replace the paragraph beginning at page 6, line 16 with the following:**

Accordingly, the roller support member 13 is always urged against the roller 6 side by the urging force of the extension urging spring 28. When the roller 7 is separated from the roller 6, its position is restricted by a stopper member (not shown).

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**Please replace the paragraph beginning at page 9, line 4 with the following:**

As for this printer, the upper side of the platen 3 and the driven roller 7 are covered with a

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platen side top cover 23 as shown in FIG. 5. Similarly, the upper side of the thermal head 2 and the driving roller 6 are covered with a thermal head side top cover 24. The thermal head side top cover 24 is screwed to the moving frame 17 (located under the thermal head side top cover 24), and thus when the thermal head side top cover 24 is moved integrally with the moving frame 17 to the position shown in FIG. 5, portions between the thermal head 2 and the platen 3 and between the driving roller 6 and the driven roller 7 are exposed to the outside of the printer as shown in FIG. 5.

**Please replace the paragraph beginning at page 10, line 20 with the following:**

In the printer described with FIG. 1<sub>a</sub> and so on<sub>a</sub> according to the invention, however, the roller located on the thermal head side out of the paired feed rollers is the driving roller 6, and the platen 3 is made free from being rotated by the motor 8, never presenting the above-described problem even if the double film is used.

**IN THE CLAIMS:**

**Please amend claim 1 as follows:**

1. (Amended) A printer for feeding a printed sheet which has been printed between a thermal head and a platen, by paired feed rollers provided downstream of said thermal head in a feeding direction,

wherein said platen is rotatably provided free from being rotated by a driving power source, and one roller of said paired feed rollers located on said thermal head side with respect to

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said printed sheet is a driving roller which is rotated by said driving power source, and the other roller located on said platen side is a driven roller which is not rotated by said driving power source.